

Creativity and Academic Achievement: Comparison between Cognitive and Trait Creativity

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Abstract. The focused objective of this work is to compare cognitive with trait creativity in relationship with academic achievement. The development related to creativity concerns the mental creativity while recent findings highlight the priority of personality creativity on educational and life success. This interpretation is based on the results of researches done in these areas of study. Despite the current attitude, mental component of creativity contributes to academic achievement as a more significant factor than its non- mental aspect. Concentration on trait and cognitive creativity affects educational system as the means for presenting and fostering creativity and innovation. Moreover, this trend influences the contemporary insight to creativity and its prerequisites not only in higher education but also in all levels of educational system.

Keywords: Cognitive and trait creativity, Academic achievement, Higher education

1. Introduction

Every day, we face new changes in all aspects of life and creativity is not only a means for adapting with changes but also a stimulus for producing knowledge in different fields of study. Moreover, creativity as one of the key factors in academic achievement is required especial attention. But the contradiction in the results of the researches pertaining to the more influential type of creativity in academic achievement necessitates researchers and experts to focus more accurately on cognitive and trait creativity and their impacts on academic achievement. Therefore, the key purpose of this study is to compare the results of six researches with cognitive and trait views to creativity and their correlation with academic achievement. The results indicate cognitive creativity is so far more correlated with academic achievement than trait creativity.

According to the report of Surssock et al.(2007) from European University Association, creativity has attracted the attention of experts and responsibilities so that it has been concerned as their main policy in their planning. However, professionals in the area of psychology view creativity from two perspectives.

Some specialists focus on creativity as mental capacity while other groups know it as a skill which is rooted in personality. For instance, Guilford identifies creativity as cognitive procedures while Sternberg believes that creativity is combination of “intelligence”, mental methods, “personality” and “motivation”. The mental aspect of creativity points out to the capacity to recognize the problem and defining it. While in the definition of Boden, creativity refers to creating the new opinions that should be attractive and understandable. Moreover; Court knows creativity as human mental capacity which assists people to apply their thinking and originate opinions and resolution (Simpson, 2012).

The other insight to creativity highlights the different aspects of this concept. According to the declaration of Sanchez- Ruiz (2011) creativity is a multidimensional phenomenon with many influential factors consisting of personality characteristics, cognitive capacities, cognitive methods and “motivation” and it is appeared in social relationship however it is a personal issue. Moreover, she cites from Kim that the results of experimental studies have estimated just 20%-40% correlation between divergent thinking and its of eleven reviewed studies confirmed the relationship between divergent thinking and creative personality as the main indicators of creativity. On the other hand, cognitive capacities have the lowest affiliation with creativity.

The results of a study with the social insight to creativity demonstrated that emotions such as “anger”, “pleasure”, “boredom” and behavioral capacities like “communication skills” and “social network skills” are

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the prepositions of creative function (Lee et al., 2008). In addition, findings of a distinguishing analysis procedures on undergraduate students done by San'chez-Ruiz et al.(2011) demonstrated that two criteria for creativity consisting of divergent thinking and creative personality are not related to cognitive creativity while personality traits correlated with two contributors of creativity.

2. Method

Concentrating on the two cognitive and trait creativity and their relationship with academic achievement, the results of six researches are compared to recognize which kind of creativity is more influential in academic achievement. Three of these studies are based on cognitive view to creativity and the others emphasize on non-cognitive aspect of creativity. In addition, in some researches the key criterion for creativity is personality because it is believed to be presented in communicational situations and in relation with others. In such studies, personality is evaluated on the basis of five main elements consisting of “neuroticism”, “extraversion”, “openness to experience”, “agreeableness”, and “consciousness” (Frum & Mervielde, 1996). Each of these factors indicates a set of characteristics. For instance, openness to experience is interpreted as the characteristics of creative people (Miller, 2006). Therefore, in this review, openness to experience is studied as the indicator of trait creativity in relation with academic achievement.

3. Results:

Based on table 1 in the following, the results demonstrate that cognitive creativity and trait creativity differentiate from the viewpoints of relation with academic achievement therefore; the outcomes of six researches are classified in two categories:

Table1. “Correlation between Creativity and Academic Achievement”

Creativity	Academic Achievement
Cognitive	0.37
	0.36
	0.24
Trait	0.24
	0.22
	0.21

3.1. Relationship Between Cognitive Creativity and Academic Achievement

The most popular attitude to creativity is cognitive approach and this issue is concerned as the mental ability and procedures which creative person deal with to solve a problem. Many researches pertaining to this domain of creativity confirm this viewpoint. For instance, Wang (2011) studies American students to demonstrate the relation between cognitive creativity and academic achievement of this group of participants. The results show that these two variables are positively related to each other with the range of 0.37. In addition, as it can be seen in the table, the results of the study on 272 undergraduate students done by Pishghadam et al.(2011) demonstrate that there is relationship between cognitive creativity of participants and their academic achievement while estimated correlation is 0.36 which is interpreted as high measurement of creativity.

Furthermore, on the study on a group of Taiwanese students, Wang(2011) observes that cognitive creativity and academic achievement are positively related to each other with the measurement about 0.24.

3.2. Relationship Between Trait Creativity and Academic Achievement

Some experts like San'chez-Ruiz(2011) believe that creativity should be paid attention as the phenomenon consisting of mental and non-mental aspects while traits and “emotional factors” are the main component in presenting creativity. In the study of personality, openness to experience has been identified as

the main feature of creative individuals and the following studies delight the relationship between trait creativity and academic achievement.

Farsides(2002)concludes that relationship between openness to experience with academic achievement of 432 graduated university students is 0.24 and this interpreted as a suitable correlation.

Moreover, in the research conducted to Diseth(2003), the openness to experience in 315 undergraduate students is correlated with academic achievement and it is about 0.22.

In addition, based on the study on 172 undergraduate students which is done by Komarraju and Karau (2005) openness to experience shows 0.21 relationship with academic achievement.

4. Discussion

Based on reviewing the results of six articles, correlation between cognitive and trait creativity with academic achievement is concerned. The data in Fig.1 show that cognitive creativity in comparison with trait creativity has the higher correlation with academic achievement in all the researches. These results can convey the importance of mental process of creativity and its influence on educational success. The outcomes of this study is in conformity with the findings of Ingham et al.(1998) that indicate creative and non creative engineer students differentiate from the viewpoints of learning styles which are working based on cognitive capacities.

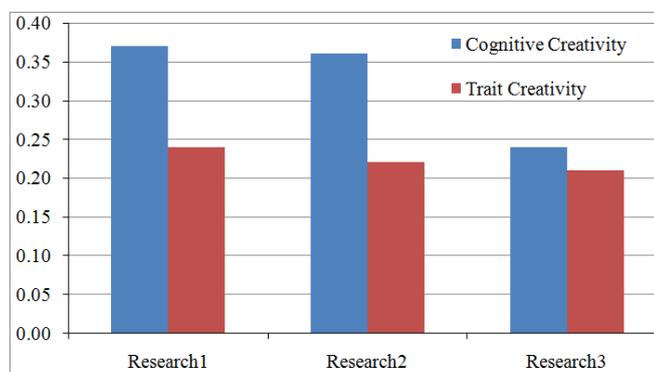


Fig. 1: "Cognitive & Trait Creativity in Researches"

5. Conclusion

This review concentrates on the comparison between cognitive and trait creativity and their correlation with academic achievement. For this purpose, the results of six researches are compared to identify the more influential aspect of creativity in academic achievement. Findings demonstrate that despite of the emphasis of some experts on trait dimension of creativity, cognitive creativity is yet more significant element in academic achievement. This trend can influence crucial benchmarks for being creative and the required backgrounds for successful learning styles. Moreover, this subject can affect the educational system and instructional plan and methods in all levels of educational system particularly higher education. Future researches are recommended to have expanded studies relating the different aspects of creativity to expand scientific and logical view to this area of educational and psychological knowledge and foster this concept and pertaining factors.

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